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ABSTRACT

Due to the increase of re-entry women in college, investigation of interest inventories for this particular population has become essential. Four studies involving 239 mature women are reported which examine the effect of changing instructions on expressed interests; the expressed satisfaction of mature women with KOIS results; the extent of profile differentiation; and the usefulness of male-normed scales with female clients. Conclusions are that the KOIS can be effectively used with re-entry women and that the profiles do reflect individual diversity: re-entry women consider KOIS results reasonable and the KOIS responses are not easily manipulated. Most women score higher on the female-normed scales than the corresponding same-normed male-normed scales; cross sex scales should be examined by women to expand alternatives considered. (Author)

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Studies of the Use of the Kuder Occupational Interest Survey with Mature Women.

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Recent college enrollment data indicate that several major changes in enrollment patterns have occurred since 1970 (U.S. Bureau of the Census, 1975). The number of women college students has increased by 30 percent (for males, 12 percent), and since 1972 college enrollment figures have been collected nationally on persons above 35 years of age. These data provide evidence that: the re-entry woman is appearing in college in increasing numbers; the greatest proportional increase is among older women between 25-34 years; and the number over 35 is also apparently increasing. Special programs exist for these women on many campuses, with counseling as a basic activity.

With this new group of women entering college, counselors need information on the usefulness of one of their main tools—the career interest inventory. The usefulness of current interest inventories for women has been questioned (AMEG Commission, 1973). Verheyden-Hilliard (1975) has argued persuasively that counselors should re-examine interest inventories from the viewpoint of the mature or re-entry women. The series of studies reported here are intended to provide some needed data for the Kuder Occupational Interest Survey, DD (Kuder, 1966). A series of five studies has been carried out, and four are reported here. These studies have been concerned with:

1. The effect of changing instructions on expressed interests. A study conducted with the Strong Vocational Interest Blank for Women (SVIB-W) showed changes in scores when directions were designed to reduce the home-career conflict. We were concerned in our first study with an aspect of validity, the ease with which results can be manipulated.

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2. The expressed satisfaction of mature women with KOIS results. Cole and Hanson (1975) argued that weaker criteria can be useful until long range studies are available, so women were asked to express their degree of satisfaction with KOIS results. This second study is concerned with the face validity of the results for women.

3. The extent of profile differentiation. Does the KOIS show flat or differentiated profiles for this sample of re-entry women?

4. The usefulness of male-normed scales with female clients. Both the KOIS and SCII now report scores on all scales to clients. Do cross-sex scales provide additional information for women?

The fifth study, in process, is concerned with the factor structure of the male-normed and female-normed scales for women.

Before describing the results of each study, I will briefly describe the sample of re-entry women. The complete sample consisted of 239 women volunteering to participate in a project to encourage re-entry into the educational system and to expand career options. The project consisted of a series of workshops held in 1974-1975 at two community colleges in New York City. The Kuder Occupational Interest Survey,DD (Kuder, 1966) was administered at the orientation meeting before the workshops.

Data are not reported on 37 women whose KOIS results were doubtful or incomplete. Demographic data were collected in a questionnaire. These women differed from typical undergraduate women college students by such characteristics as age (the median age was 38 years), marital status (two-thirds were married and 19% had been married), family responsibilities (89% had children), and past work experiences (about 84% had full-time work experience).

The four studies reported here deal with varying subgroups of the 202 women for whom we had KOIS results. I will now describe the main findings from each of the studies.

Study 1

A study reported on the SVIB-W by Farmer and Bohn (1970) indicated that a readministration of the SVIB with experimental directions increased the number of career scales with high scores. In our first study, 121 of the women participated in an experimental administration of the KOIS. Women were randomly assigned to an experimental and control group. The directions were designed to reduce home-career conflict, and, in part, read:

"Many women have not based their work choices on what was best for themselves, but on other considerations....I want you to put aside the attitudes and prejudices about what a woman can or cannot do; pretend that men's ideas have changed and that

1. men like intelligent women
2. men and women are promoted equally
3. Raising a family well is very possible for a working woman...."

Results indicated that responses were not readily manipulated with the KOIS for this group of women. In fact, of the 33 scales chosen for comparison, there were no significant differences for 32 of the scales. In only one instance (the occupation of Psychologist, female norms) did the experimental group score significantly higher ($p < .05$). The groups were also compared by contrasting the ten highest scales in each of the occupational and college major sets of scales, male and female normed. For both sets of scales which have male norms, nine of the ten highest scales were identical. On the college major scales, female norms, eight of the ten highest scales overlapped ($p = .044$). On the fourth set, Occupational Scales, female norms, there were four scales in common of the ten, $p = .205$. It appears that KOIS results will not be easily altered and the validity of the scores will not be seriously questioned by changes in directions as used in this study. (Tittle and Denker, 1976, in press).

Study 2

Fifty-six women were followed-up and asked to rate the reasonableness of their KOIS results. Most of the women (over 70%) agreed or strongly agreed with the statement that their KOIS results seemed reasonable on each of the four sets of scales. No one "strongly disagreed" with any scale set. Re-entry women view the KOIS as reasonable, which provides evidence of face validity, a prerequisite for the use of the interest inventory with this population. (Denker and Tittle, 1976).

Study 3

This study was concerned with the extent of profile differences among mature women. The scale score of the KOIS is a lambda score, which "represents the degree of correlation between the individual's responses and the responses characteristic of each of the criterion groups" (Kuder, 1966, p. 7). However, the general level of lambda scores differs from individual to individual, and thus the lambda scores are not readily comparable across individuals (Clemans, 1968; Kuder, 1969). For this reason, in an effort to examine a group profile, the lambda scores were standardized within individuals. Means and standard deviations were computed for each individual within the female-normed set of scales (occupations and college majors) and within the male-normed set. A standard, z-score was computed for each scale and used in the following analyses (the procedure was suggested by Zytowski, 1976).

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Insert Table 1 about here

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Table 1 presents a comparison of the lambda and standardized lambda scores. The absolute values of the lambda scores are, on the average, lower for male scales than for female-normed scales. For the occupational scales, you will notice, the highest mean lambda is .460 on a female scale; for the male scales

the similar mean is .398. The standard deviations of the lambda scores are very similar across the sets of scales. However, when the lambdas are converted to standard scores (computed within individuals) and then averaged, a greater variability in the set of male scales becomes apparent. The ranges of the mean and standard deviations for the occupational scales-male and college majors-male are wider than for the female scales. For this group of women, there is more variability within each profile on the male normed scales.

To examine the extent of differentiation among the scales for the women in the study, profiles based on the average standard scores were constructed. If the profiles were flat for the sets of scales, the KOIS would not be reflecting differences in the interests of the women. The profiles were not flat. It you look at Table 1, the female-normed occupations show a range for mean standard scores from +.609 for Administrative Dietitian to -.822 for Department Store Saleswoman. The range on the male-normed occupations was even larger: from a mean standard score of +1.268 on Social Caseworker to -1.183 on Automobile Mechanic. The KOIS scales do provide differentiation among the interests of this sample of re-entry women.

Study 4

The last study to be presented here was concerned with the question of the use of male-normed scales with female clients. Do these cross-sex scales provide additional information? There were 25 occupations not included with the female-normed scales which were above the mean of the male-normed occupations. These occupations included Mathematician, Architect, Physician and School Superintendent. It is apparent that the use of the male-normed scales in counseling women will increase the number of choices presented, and in addition, specific occupations can be considered in relation to a more complete spectrum of occupations (see Cole, 1973, for a criticism of the KOIS women's scales based on this point). We would expect that a study of the concurrent

validity of the KOIS would show results similar to those for the SCII found by Whitton (1975). Whitton reported that the cross-sex scores were as reliable and valid for the SCII as the same-sex scores. Using all the occupational scales (both female-normed and male-normed) resulted in significantly higher concurrent validity.

There were two other issues explored in relation to the use of cross-sex normed scales. One concerned the set of scales that have the same name in both norm sets. The second was whether some women might show their highest interest scores on the male-normed scales rather than the female normed scales.

For the first question, we examined the 17 occupations which appear with both the female and male norms, for example, Interior Decorator, Lawyer, Physical Therapist, and Bookstore Manager. For the sample of 202 women, all 17 occupational scales had higher means on the female-normed scale than on the male-normed scale. The same was true of the 12 same-named college major scales. Occupations and college majors which had the smallest differences between the male and female normed scales were those considered feminine: Interior Decorator, Librarian, Social Worker. The greater discrepancies were found on those occupations and college majors considered more masculine: Lawyer, Accountant, Mathematics and Physical Education. These findings are in agreement with those of Lunneborg (1975), and the interpretation or emphasis placed on the scale within each norm set will vary with the degree of "femininity" of these same-named occupations.

For the occupational scales, 70% of the women had either all female scores higher than the corresponding male score or all but one. Thirteen percent of the women scored higher on six or more male scales than the corresponding female scales. Similar results were found for the college major scales.

A relatively small percentage of women received higher scores on the

male-normed scales. Thirty-four women (17%) were identified whose highest score appeared on a male-normal scale; they were compared to the remaining 168 women on family and educational variables. These 34 women tended to be approximately five years younger than the other re-entry women (median age of 33.5 years compared to 38.5 years) and a lower proportion were currently married (53% compared to 68%, $p < .05$). These women's fathers tended to be better educated, but there was no significant difference between the two groups on husband's education. Seventy-one percent of this group expected to be in school or in full-time work in six months and in five years, compared to the rest of the sample, where 55% expected to be in school or full-time work in the future ($p = .04$).

In summary, what conclusions can be reached from these four studies and what are the implications for counseling?

1. The KOIS can be effectively used with re-entry women. Profiles are not flat, but reflect individual diversity.
2. Re-entry women consider KOIS results reasonable.
3. Standardized lambda scores are more meaningful in the preparation of group profiles than are lambda scores.
4. Responses to the KOIS are not easily manipulated, a finding which contributes to the validity of the instrument.
5. Most women score higher on the female-normed scales than the corresponding same-named male-normed scales.
6. Cross-sex scales should be considered by women. The additional occupations and college majors expand alternatives for the client.
7. Some women will receive higher scores on some male-normed scales than the corresponding female-normed scales. High scores on male-normed scales should be seriously considered by women for those occupations highly associated with typical masculine interests/—their interests are apt to be like those of

the men in them. However, high scores on those male-normed scales not considered masculine may reflect the sharing of traditional feminine cultural interests with the men in that occupation, and not particular professional goals and activity preferences.

8. A small proportion of women will show higher level profiles on the male-normed scales than on the female normed scales. These appear to be women who were somewhat younger, on the average, and who expected to be either in school or in full time work in the future.

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Table 1

Range of Lambda Scores and Standardized Lambda Scores on the KOIS Occupational and College Major Scales (Male and Female Norms): Highest and Lowest Mean and Standard Deviation for each Set of Scales.

		Range of means		Range of standard deviations	
Type of score	Scale and norm group	Lowest mean	Highest mean	Lowest SD	Highest SD
Lambda scores	Occupational-female	+.374*	+.460	.094	.117
	College major-female	+.382	+.467	.090	.116
	Occupational-male	+.210	+.398	.080	.110
	College major-male	+.240	+.406	.086	.115
Standardized lambda scores	Occupational-female	-.822	+.609	.636	1.311
	College major-female	-.873	+.804	.537	1.382
	Occupational-male	-1.183	+1.268	.463	1.407
	College major-male	-.901	+1.373	.441	1.265

*This, for example, was the mean score received on the Department Store Saleswoman scale.

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